

Nephrology MCQ

1- Which of the following electron microscopy findings on the renal biopsy is most likely with poststreptococcal GN ?

- a) Diffuse mesangial deposits
 - b) No deposits
 - c) Closed capillary lumen
 - d) Subepithelial humps**
- Light microscopy : diffuse proliferation.
 - Immunofluorescence : granular IgG & C3.

2- Which of the following findings on the urinalysis is most likely with acute GN?

- a) Proteinuria
- b) WBC casts
- c) Erythrocyte casts**
- d) Hyaline casts

3- Which of the following changes in the kidney is most likely seen with analgesic nephropathy?

- a) Glomerulosclerosis
- b) Papillary necrosis and tubuleinterstitial inflammation**
- c) Tubular necrosis
- d) Cortical necrosis

4- Which of the following complications of transplantation is the most likely cause of death?

- a) Atherosclerotic disease**
- b) Opportunistic infection
- c) Lung cancer
- d) Lymphoma

5- Which of the following is not compatible with diabetic nephropathy?

- a) Nephrotic range proteinuria
- b) Hypertension
- c) RBCs casts in urine**
- d) Renal tubular acidosis type IV

☞ RTA type IV (hyporeninemic hypoaldosteronism) : caused by renal dysfunction-most commonly diabetic nephropathy, NSAIDs, Cyclosporine.

6- Which of the following laboratory values suggests prerenal azotemia?

- a) Markedly elevated urea, unchanged creatinine.
 - b) Unchanged urea, elevated creatinine.
 - c) Urea/creatinine ratio of 10
 - d) Urea/creatinine ratio of 25**
- The urea/creatinine ratio is usually < 10 in intrinsic renal disease and > 20 in prerenal.
 - Fractional excretion of Na is $> 2\%$ in intrinsic renal disease and $< 1\%$ in prerenal azotemia.

7- A 27 year old woman with well controlled bipolar disorder, develops polyuria and polydipsia. Which one of the following is the most likely diagnosis?

- a) Central DI
- b) Nephrogenic DI**
- c) Osmotic diuresis
- d) Primary polydipsia

She is treated with lithium, and lithium is one of the drugs that cause Nephrogenic DI.

8- A 19 year-old man and one of his 2 brothers have polyuria and polydipsia since birth. Neither his sister nor his parents are affected. What is the most likely diagnosis?

- a) Central DI
- b) Nephrogenic DI**
- c) Osmotic diuresis
- d) Primary polydipsia

Nephrogenic DI can be inherited on the X chromosome. Its X-linked recessive nature means that males are predominantly affected.

9- A 21 year old woman develops polydipsia and polyuria during pregnancy. The the most likely diagnosis is :

a) Central DI

b) Nephrogenic DI

c) Osmotic diuresis

d) Primary polydipsia

- Primary deficiency of ADH can result from increased metabolism by a placental enzyme (gestational DI). It resolves within a few weeks after delivery.
- Gestational DM also can result in hyperglycemia & polyuria (osmotic diuresis)

10- A 20-year old man comes to the physician because he has noticed blood in his urine on several occasions over the past year. Each episode of hematuria occurred in association with an upper respiratory tract infection or flulike illness. Physical examination is unremarkable. A urine dipstick test shows mild proteinuria & microhematuria. Serum level of electrolytes, creatinine & urea are normal. Which of the following is the most likely diagnosis?

a) Goodpasture syndrome

b) Berger disease

c) Henoch-Schönlein purpura

d) Postinfectious GN

- Postinfectious GN : Hematuria occurs 1-2 weeks after URTI or impetigo.
- Henoch-Schönlein purpura : hematuria is associated with palpable purpura, arthralgia & abdominal pain. It usually affects children.
- Goodpasture syndrome : typically involves both the lungs & kidneys. It manifested by hemoptysis & nephritic syndrome.

11- What segment of the normal kidney is most of the water reabsorbed from?

a) Proximal tubule

b) Distal tubule

c) Ascending loop of Henle

d) Descending loop of Henle

12- A renal biopsy shows nodular deposits that have an apple green birefringence under polarized light when stained with Congo red in which of the following ?

- a) Multiple myeloma
- b) Amyloidosis**
- c) Diabetic nephropathy
- d) IgA nephropathy

- The only way to make a definitive diagnosis of amyloidosis is to take a biopsy and stain the tissue sample with Congo red. Under polarised light it shines not red but a greenish hue termed, classically, “apple-green birefringence”. It is not seen in any other renal disease.

13- Which of the following is the most likely mechanism for the renal injury in a case of multiple myeloma?

- a) Plasma cell infiltration
- b) Tubular damage by light chains**
- c) Vascular injury by light chains
- d) Glomerular injury

In MM, tubular damage by light chains is almost always present. Infiltration by plasma cells & glomerular injury is rare. Other causes : hypercalcemia, amyloidosis, infections e.g. pyelonephritis.

14- A 4 -year-old child presents to the ER with history of bloody diarrhea & decrease urination. The mother states that the child's symptoms began 5 days ago, after the family ate at a fast food restaurant. At that time, the patient developed fever, vomiting, abdominal pain, & diarrhea. On physical examination, the patient appears ill. He is pale & lethargic. Which of the following is the most likely diagnosis?

- A. Goodpasture syndrome
- B. Hemolytic uremic syndrome**
- C. Henoch-Schönlein purpura
- D. IgA nephropathy

15- Which of the following medical comorbidities is most likely to coexist with UTI?

- a) Influenza
- b) Exercise
- c) Diabetes mellitus**
- d) Analgesic drug use.

UTI is increased in DM, pregnancy, Sickle cell anemia, polycystic kidney, & structural abnormalities of the urinary tract.

16- Normal adult kidneys...all are true except :

- a) its length is about 11-14 cm (about 3 vertebral bodies)
- b) both kidneys rise and descend several centimeters during respiration
- c) each kidney contains approximately 10 million nephrons**
- d) both kidneys receive about 20-25% of the cardiac output
- e) the right kidney is usually few centimeters lower than the left

The correct answer is c) as each kidney contains 1 million nephrons.

b) is true, but clinically may not be that apparent.

d)-hence in hypovolemia, rapid activation of the renin –angiotensin systems

e)-because of the liver...

17- Causes of polyuria...all are true except

- a) excessive fluid intake
- b) early stage of chronic renal failure
- c) tubulointerstitial diseases
- d) heavy smoking**

Smoking stimulates ADH secretion

18- Renal biopsy....all are indications except

- a) unexplained acute renal failure
- b) chronic renal failure with normal sized kidneys
- c) atypical childhood nephrotic syndrome
- d) isolated hematuria with normal looking RBCs**
- e) nephrotic syndrome in adults

Isolated hematuria with Dysmorphic RBCs (glomerular hematuria)

19- Causes of DARK urineall are true except

- a. **All cases of porphyria**
- b. Intervertebral discs calcification with dark ears
- c. Parkinsonian patient
- d. Pulmonary TB patient
- e. Massive crushing trauma patient

The correct answer is a : not all cases ...some types don't discolor urine.

b-Alkaptonuria

c-He is on L-dopa

d-He is on rifampicin

e-Myoglobinuria

20- As regard to acute renal failure :

- a) Pre renal causes are uncommon
- b) 80% of intrinsic renal causes are due to acute tubular necrosis**
- c) Underperfusion causes of ARF are usually irreversible
- d) 25% of intrinsic renal causes are due to acute glomerulonephritis.

a : The commonest

b: TRUE, toxic and ischemic type

c: Almost always reversible

d: 5 % only and 10 % for interstitial diseases

21- Rapid respiratory rate in acute renal failure may be due to all but one of the followings

- a) Acidosis
- b) Pulmonary edema
- c) Chest infection
- d) Hyperkalemia**

22- In microalbuminuriaall are true except

- a) Is defined as proteinuria between 30-300 mg / day
- b) Is defined as proteinuria between 20-200 microgram / minute
- c) Always protein dipstick negative
- d) Important in the follow up of type II not type I diabetes mellitus**
- e) Persistent proteinuria has been associated with the development of atherosclerosis

The correct Answer is d : It is very important in the follow up of both types of diabetes.

23- In Drug and toxin induced renal disease ...the following associations are true except

- a) NSAIDs and minimal change nephropathy
- b) Ciclosporin and chronic interstitial nephritis
- Lithium and nephrogenic diabetes insipidus

c) Cisplatin and renal loss of sodium

Cisplatin induces loss of magnesium through tubular dysfunction mechanism.

24- Risk factors for renal stone formation...all are true except

- a) hypercalciuria
- b) hyperoxaluria
- c) hypercitraturia**
- d) hyperuricosuria
- e) cystinuria

- Hypercitraturia is protective, citrate is an inhibitor of calcium crystal formation.

- Hyperuricosuria (excessive amounts of uric acid in the urine), hypercalciuria & hyperoxaluria are true.

25- In acute interstitial nephritis ...all are true except

- a) The commonest cause is drug induced
- b) Blood eosinophilia is seen only in 30 % of cases & eosinophiluria is seen up to 70%
- c) Should be suspected in any non-oliguric acute renal failure
- d) Predominant infiltration of the tubulo-interstitium with eosinophils on renal biopsy is more suggestive of a viral etiology.**

The correct answer is d : suggestive of a drug induced etiology

26- Chronic interstitial nephritis may be caused by all of the following EXCEPT

- a) Multiple myeloma
- b) Cadmium
- c) Ciclosporin
- d) Hanta virus infection**
- e) Wilson disease

- The correct answer : d) Hanta virus infection is a cause of ACUTE interstitial nephritis.
- Notice that Wilson disease may cause chronic interstitial nephritis as well as causing proximal RTA and Fanconi syndrome.

27- In Renal biopsy with immunofluorescence staining looking for immune depositsall are true findings of the suggested disease...except

- a) Minimal change disease – non immune deposits
- b) Membranous nephropathy –granular subendothelial IgG**
- c) IgA nephropathy – mesangial IgA deposition
- d) Type II membranoproliferative glomerulonephritis – intramembranous dense deposits

The correct answer : b) Membranous nephropathy will show granular subepithelial IgG deposition.

Lupus nephritis & type I membranoproliferative glomerulonephritis will show subendothelial deposits.

28- Hemoptysis is found in all of the following EXCEPT

- a) Goodpasture's syndrome
- b) COPD**
- c) Bronchogenic carcinoma
- d) Bronchiectasis

29- In glomerulopathies ... all are true except *

- a) Minimal change disease is associated with HLA DR7, atopy and drugs
- b) Membranous nephropathy is associated with HLA DR3, drugs and heavy metals
- c) Association with liver disease has been documented in IgA nephropathy
- d) Membranoproliferative glomerulonephritis type I is associated with C3 nephritic factor and partial lipodystrophy**
- e) Focal segmental glomerulosclerosis is associated with obesity, HIV infection and heroin abuse.

- Correct answer : d) Membranoproliferative glomerulonephritis type II is associated with C3 nephritic factor and partial lipodystrophy.
- Type I is associated with hepatitis B, cryoglobulinemia, and bacterial infections. Also Goodpasture's syndrome is associated with HLA DR15 (previously HLA DR2).

30- Causes of hypo-complementemia in inflammatory nephritis includes all of the followings except

- a) SBE
- b) SLE
- c) Post-infectious glomerulonephritis
- d) Microscopic polyangiitis**

Correct answer : d) Remember; systemic necrotizing vasculitis is pauci-immune and does not produce hypocomplementemia.

31- In stage 5 chronic kidney disease, the GFR falls below :

- a) 20
- b) 10
- c) 15**
- d) 5

32- Blood level of all rises in ARF except

- a) Uric acid
- b) K
- c) Na**
- d) Creatinine

33- All are true in ARF except

- a) Increased urea
- b) Increased H⁺
- c) Increased Ca**
- d) Increased K

34- Fruity odour in urine is found in

- a) UTI
- b) DKA**
- c) Alkaptonuria
- d) Chyluria

35- Which is not a neuromuscular complications of uremia

- a) Encephalopathy
- b) Myelopathy**
- c) Neuropathy
- d) Myopathy

36- Which is not a criterion for diagnosis of nephritic syndrome

- a) Hypertension**
- b) Massive Proteinuria
- c) Anasarca
- d) Hyperlipidemia

37- Acidic urine is produced in

- a) UTI by Proteus
- b) Renal tubular acidosis
- c) High vegetarian diet
- d) Chronic renal failure**

38- Which of the following does not produce red urine

- a) Hemoglobinuria
- b) Myoglobinuria
- c) Microscopic hematuria**
- d) Acute intermittent porphyria

39- Broad casts are found in

- a) AGN
- b) UTI
- c) Analgesic nephropathy
- d) CRF**

40- Colony count in a symptomatic UTI is more than

- a) $10^3/\text{mL}$
- b) $10^4/\text{mL}$
- c) $10^5/\text{mL}$**
- d) $10^2/\text{mL}$

41- AGN may be produced by all except :

- a) Hepatitis B
- b) Malaria
- c) Kala-azar**
- d) Pneumococcus

42- Isolated hematuria is not found in

- a) Renal TB
- b) Papillary necrosis
- c) Acute glomerulonephritis**
- d) Sickle-cell nephropathy

43- Complement C3 is characteristically low in all except

- a) Membranoproliferative GN
- b) SLE
- c) Focal glomerulosclerosis**
- d) Post streptococcal GN

44- Nephrotic syndrome may be associated with hypertension in all except

- a) SLE
- b) Focal glomerulosclerosis
- c) SBE**
- d) DM

45- Commonest renal lesion in diabetic nephropathy

- a) Diffuse glomerulosclerosis**
- b) Chronic interstitial nephritis
- c) Arterinephrosclerosis
- d) Nodular glomerulosclerosis

46- Which is false regarding Berger's disease

- a) Recurrent hematuria
- b) ↑ serum IgA
- c) It may represent a form of Henoch Schonlein purpura
- d) ↓ Complement level**

47- Complete anuria is found in

- a) Diffuse cortical necrosis**
- b) Acute gastroenteritis
- c) Acute renal failure
- d) Acute interstitial nephritis

48- Which metal is not responsible for development of nephritic syndrome

- a) Gold
- b) Iron**
- c) Mercury
- d) Lead

49- Absolute indication for dialysis

- a) Serum K level > 6 mEq/L
- b) Serum urea level > 200 mg/dL
- c) Serum creatinine > 4 mg/dL
- d) Clinical evidence of pericarditis**

50- Which is not typical association in adult polycystic kidney disease

- a) Polycythemia
- b) VSD**
- c) Nephrolithiasis
- d) Berry aneurysms